WHAT IS CLAIMED IS:

1. A method for determining the presence of a missile seeker, comprising the steps of:

projecting ultrashort laser pulses towards a search area;

detecting returns from the search area with a focal plane array having an array of photo detectors, each of the photo detectors having a threshold circuit coupled to the output thereof and set high enough to ignore returns from the terrain illuminated by the laser;

directly reading out each of the photo detectors in a time short enough to obtain a reading from each of the photo detectors before the arrival of the next pulsed return, the time defining a frame;

determining from the readout that there is a return from a missile seeker and the position thereof if there is a signal from a single threshold circuit during the frame, whereby the threshold level limits returns whose amplitude is not indicative of a seeker.

2. The method of Claim 1, and further including the step of filtering out signals which exceed the threshold but persist beyond the interpulse spacing time, whereby elongated returns from the illuminated terrain are ignored.

3. The method of Claim 2, wherein the filtering step includes providing a NAND gate having one input thereto coupled to the output of the threshold circuit and the other input thereto coupled to a delayed version of the output of the threshold circuit.

4. The method of Claim 1, wherein the ultrashort laser pulses are nanoseconds in length, thus to be able to discriminate compact targets from ground returns.

5. The method of Claim 4, wherein compact targets are discriminated from ground returns by ascertaining if during a frame there are only a small predetermined number of outputs from the threshold circuit.

6. A focal plane array adapted to detect returns from objects illuminated by a pulsed search laser, comprising:

an array of photo detectors, each of said photo detectors coupled to a threshold circuit; and,

a demultiplexing circuit for directly reading out said threshold circuits in a time frame less than the time between returns to said array, whereby the demultiplexer reads out all of the photo detectors in said array virtually simultaneously.

7. A detector element in a focal plane array, comprising:

a photo detector;

a threshold circuit coupled to said photo detector; and,

a filter coupled to said threshold circuit for ignoring an output from said photo detector exceeding a predetermined time duration.

8. The detector element of Claim 7, wherein said filter includes an RC circuit set to filter out outputs from said threshold circuit that persist longer than a predetermined time.

9. The detector element of Claim 8, wherein said predetermined time is in the nanosecond range.

10. The detector element of Claim 7, wherein said filter includes a NAND gate having one input thereto coupled to the output of said threshold circuit and a delay circuit coupled between the output of said threshold circuit and the other of the inputs to said NAND gate.

11. The detector element of Claim 10, wherein said delay circuit delays the output of said threshold detector in the nanosecond range.

12. A focal point plane array architecture comprising:

a photon detector and a threshold circuit for each pixel of said array for increasing the feasibility of photon counting at infrared wavelengths;

an ultra fast frame readout for said array utilizing direct pixel readout;

means coupled to said frame readout for inherent discrimination of compact targets; and,

means coupled to said means for inherent discrimination for programmable range gating by exterior selection of array events within an expected return time for a transmitted pulse.